

IN THE SPECIFICATION:

Please rewrite the sixth paragraph on page 2, which starts "Brief description of the accompanying drawings" as follows:

**Brief description of the accompanying drawings**

Fig. 1a. Information storage in DNA. Structure of prototypical single segment information storage in DNA strand.

Fig. 1b. Information storage in DNA. Structure of prototypical multi segment information storage in DNA strand.

Fig. 2. Encryption of extended ASCII character set in terms of DNA bases

Fig.3. Encryption Key. Extended ASCII characters in terms of DNA strands

Fig. 4 is a process sheet for encryption and storage showing the encoding of digital information for "WELCOME" using the DNA sequence TTAGTACATAGCTATGTACCTAACTACA (SEQ ID NO: 5) and the following primers:

Header Primer: ATTATATATATATTATAT (SEQ ID NO: 8)

Terminating Primer: TTTATATATATATTATTT (SEQ ID NO: 9)

Continued Tail Primer: TTTATATATATATTACCC (SEQ ID NO: 10).

Fig. 5 provides a process summary for encryption and decryption of digital information for "WELCOME" using the DNA sequence of SEQ ID NO: 5 and the header primers of SEQ ID NO: 8.

~~Fig.4. Process sheet for encryption & storage~~

~~Fig.5. Process summary~~

Please replace the second paragraph from the end of page 4, which starts "b)

The input information" with the following:

b) The input information is then encrypted character-by-character using array generated in step 1. The basis is ASCII values of each character is matched with the element no. of the array of step 1.

Encryption of the text "CSIR" in terms of DNA bases may be:

**TATGTTTCTATTTTAC** (SEQ ID NO: 5) where:

C is represented by DNA sequence TATG

S is represented by DNA sequence TTTC

I is represented by DNA sequence TATT

R is represented by DNA sequence TTAC

Please replace the fourth paragraph on page 5, which starts "g) The encrypted DNA" with the following:

g) The encrypted DNA can then be transported on paper, cloths, buttons or through any other medium.

Isolation decryption of above encrypted DNA sequence TATGTTTCTATTTTAC

(SEQ ID NO: 1):

Please replace the seventh paragraph on page 5, which starts “c) Obtained sequence is” with the following:

c) Obtained sequence is interpreted (integrated if multi-segment before interpretation) using DNASTORE software. The basis for retrieval is a string of 4-bases each at a time is taken and matched with array as generated in step 1 of encryption and storage. The element number of matching value is taken and converted to its ASCII equivalent.

If the retrieved sequence is TATGTTTCTATTTTAC (SEQ ID NO:1). The Decryption would be:

first 4-bases i.e. “TATG” would be in the array storage and encryption 67 = C  
next 4-bases i.e. “TTTC” would be in the array of storage and encryption 83 = S  
next 4-bases i.e. “TATT” would be in the array storage and encryption 73 = I  
next 4-bases i.e. “TTAC” would be in the array of encryption 67 = R  
Integration of above decrypted values in the same sequence as retrieved is “CSIR”.

Please replace the first paragraph on page 6, which starts “Example 2. Some examples” with the following:

**Example 2.** Some examples of DNA encryption for textual data

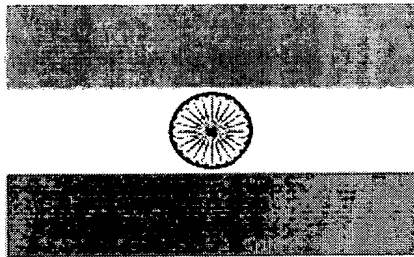
Digital Information	Encrypted DNA sequence
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WELCOME	TTAGTACATAGCTATGTACCTAACTACA ( <u>SEQ ID NO:2</u> )
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WORLD PEACE	TTAGTACCTTACTAGCTATAAGCTTTCCTACATAGG TATGTACA <u>(SEQ ID NO:3)</u>
INDIA	TATTTATCTATATATTTAGG <u>(SEQ ID NO: 4)</u>
CSIR	TATGTTTCTATTTTAC <u>(SEQ ID NO:5)</u>
CSIO	TATGTTTCTATTTACC <u>(SEQ ID NO:6)</u>

Please replace the paragraph bridging pages 6 through 13, which starts, “Example 3. A JPEG image encrypted” with the following:

#### Digital Information



#### Encrypted DNA sequence

TAAATATTTAGAAAACAATCTCGTGGCGATC  
 GCGCCATCGGCTAACCTATCGATCGCTGGT  
 CGCGTATCAACAATCGTCGGTCGGTCGCGC  
 CCTACGGGCTCTTCGAACCCCGTAGGCGAC  
 ACGGCGCGGCGGATGATTGTCGCCTTGCTA  
 CCCGTGGTGCGCCAGACCTTCGACGCTCC  
 TGGTACCTGCGCCTCATCGTTATCTTTGTTG  
 GAGTGCAAGATGGAGAGTTTCCCGGACGGG  
 TAGCAAGCCTGCGTAATATCTCCAAATGTCC  
 AAAGCTTATTGTTTTCAATAACGTGATCCTTT  
 ACCTGCACATTAGTATTATCACCAGCGTGCA  
 CCCATGCGGGCGCCAACCTTGCTGGACTTC  
 GACGCCGCTGTCGTTGCCCTCTGAGTGAAT  
 GATTGTGCCCACTGTGGTGGGGCGCCTAGT  
 CGGTGCGTCGAGGTGTTCAATTAATGGATCG  
 ATCGACCTATCGAGGAATCGATCGATCGAT

CGGGCGATCGCGCCATCGATCGATCAGTCC  
TCCTACGCCGGCTCTCTCTGCATTTAGCTC  
GCTTATCGAGAGGCCTGTGCAAGGAGCCCT  
GTTACATTGGGCTATCTAAGACATGGGGAC  
AGTCGGCCGACAGAGTATAATAGGAACCAC  
GCCTAATGGATAACAGCTTTCGAAACCCAC  
TCCAGAGCCTGTTTACTCTAATTGGCTCCG  
GGGCTGATGGTGAGGGCTGTGAACCCGGA  
CTCCCAGCCTAGGGAGTACAGACCATGATC  
CCTATGCCGGATTAGCCCTAGGCTGTCACA  
CTAAGCTATCCTCAGCGTGAGCGTGTCCGG  
ACTTCGCAGGCTGTGCGTCTTGAGTGCGCG  
AGTGGACGGGCGTGCGGATCCGCGCACGA  
ACGCTTCGTCGTTCGGTCGTCTTCACGACC  
GCCCAACTTTCCAGCCATCCAGGTAGCCAC  
GCAAGCACATACACATACAGACATTTTATAA  
TCCACTCTATTATCCAATCTTTCTGCTGATC  
TGTCTACCTCGTAGGCTCCCTGGCTTAAGT  
GCTAACTCACCAAAGTCCCGACCTACCAAC  
CCTCCGTCTTACCACCCTCCTCGCCGCCCG  
GCTGCCCTGCCCGCTATGCGGGCAGCATTG  
CTAGCCACACAGCAAGCATCAGGGCCTGCG  
TCAACGCACGCTCCGTCCGGCCGGGCCGCTC  
GTCGGTGCGGAGGGGGGAGCGAGGGTAG  
GCATGTGGGGTGGATCGCGCTTGGACTCCT  
CGGCTGATTTGCTGACCGAGCCGTAGAATG  
ATGCTCAGAAGGAGATCGAGATAGACACGA  
TACTTATCAGTCTGTGTGTATGTACGTTCTG  
CCGTGCGTGGGTAGGTTGGTCGATCGATTG  
ATCTACGTTAATCCCCTCTGCGGCGTGAC  
ATAATGAATTACCCGCCGCCCACTGTGCTG  
CGAAACCCAGTTTACTCAGTTAATCCGACTA

TGCCACGGTACAAAATATCCGGGGTGCATC  
CGACTTTGCAAATGAATCTAAAGCGCTACGT  
TATTGTAAAGATCGTAATTAACGAAGCGGTC  
GTTAATTAATCTGAGGTGCAGATGAATACAT  
TTAAACCATGCAGTTATTCATCAGTCGCATC  
GCAAACCTTGTAGACGCTGAATATTAGGTATG  
ATTAATGATACGCGTGATGACAATTACGTGT  
TTAAGCGCAATTAATTCTGGTAGCGTTATGC  
CTGTCAAGGCGGTCCTACAACTAGGTTCTGA  
TCCTTACGACTGGAAGATGGCTCTACACAC  
GGACCCCCCAAACCAATTATAGTTACCTAGT  
CCTTAAAAACCATACTAGTTTGGCTTTATTG  
ATACTAAGACTAAGCTTACGTCCTGACTCGC  
GATTAATGGACACACGTTTCCTGACAAGCTC  
CTCGGGGGCCATATATATGCCTGACGCCAG  
AACTGGTCTCATTCTCGATATGAAGCGACC  
CAAAGCGCGGTGTATCGTTGTGAATCCAA  
CTAAGATGCATCGCGCGCGGCGGATCAATC  
TTACGAGACTCAGGTACTAGTGGTATCGTG  
GCTGCCTTGTGACGCTTAAATCGTACTTCGT  
CGCGATTGATTGTATTATAACAATCAGCAA  
ATTAAATCGATGGCGGACTTTATAAAGCTAA  
ACTACGCCTTTAAGTTACGCGCTGTGAGCA  
GCTGAGGCCGGTTCCTTAAGTTCCATACATT  
CTATCAATAGCGCTTCCTGCCTAGGTATGG  
GCTCTAGGGCTATCTTGCTAAAGTTGACTCA  
GAGAGAATTACCTCGGAATAAAACAACACG  
CGGCAGTCAGATTTTGTCACTATTTTACGT  
AACTAGGGTGATCTCCGGAATGTCAACTCC  
GGGCCCCCACACGATGGTGGAGATCTCCTC  
GCCCCGTGGGCTTCTGGACTAGACGTTAGGG  
CATGCACATACGTTGACGAAATTGTTACGCC

GAGACGATAGAATTTATAACCTTTCCACCAT  
CTAGTATGAGGGATTTCATACGCTGCCCTTCT  
CCTAATAGGAACGTACACTAAATTAATTGCC  
GTGCTACCAATGCGACTACTTTGGGATAAC  
GGCCTGCGGTTGTCGTCGGGTGAACTATCC  
TATCGTTCGACTCTATAGCAAGGCTTATCGT  
GCTAACTAATTTACATAGTAGGACTATCGCC  
ACACGGGATGCACATACCCGACTATCGGGT  
CCCAGAGACTACGTTGAGGAAAGCCAGGCT  
TAGTTTTACACATTAACCGATGGCGTGACGC  
GGACTTTGTCGTCGGTACATAATCGTCAGG  
TCATCAATTCCTGCTGATATGGCGAAATTGC  
TGAGTATCTCTATGGACTAACAAGTCTAGG  
TGCTCTGGAGCCGACCGCCGCGACATACAA  
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CGTCTACTTGGTATGGGGCACCTTGCCGTC  
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GGCCCCTCACGGGATATGGTGATAATGTTT  
ACTAGCTTTACACGTTTCTAGCAGAATTGCG  
AAATGACGATAGCCTTCCACGCATATGTCCT  
TGCCTCTCACATCCGAATTGGCGATGGATG  
TCTCTAAATGAATTCTTATGGTCGCGACTTT  
AACGCTTCCAAGATAACAACAGATGGTGCT  
CCTGAATCACATCTCCTTTGATCTTGACATG

GTTCCACCCTGTTCCCCGGGCCAACCCGTT  
AAGCCTTACTATGTGATTTCGACCTAATATGG  
ATAGTCCATCCGGCCATCCGTGTACAATAAT  
CCACAGACTCTGTAATTTAGAATTACATGCA  
CTCCTCTCATCGTATCGGCCTAATGCTAGG  
ATCGGGTGCGCGATTATACGGCAACTCTGT  
CGATGGCCTAGGTTGAAGGGGGATCAACA  
CGGTGTACATAGGCCCTACAGCTGACGTTT  
ACGTATGATGAATGCTTCCTCAATGTAATGC  
TCGAATCGAGAATTCTCAGTCTTAAGGGCA  
GCCATCGGAGCACGTGGCGCGGCAATATTC  
ATTATGACAGAGCTATACAGCCCACTCGGG  
CGATAGACTGCTGAGACGCAAACGTGATAT  
TAATTACGATGGCTAGCATTTCGACATATCAT  
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CTTATGTGCGCGTGCGAAACAATATATTGTT  
CGAAGTGATATGGGATAGGTCAGTGTCATA  
TAATGTAAATCGGTTTCGTCTGACGCGATTTA  
AGGCTCACATTGTTATCGCTAATCGGGATG  
AACGGCTCAAGTGCAGCATGGCACCAAGAT  
TCCGAGGGCAAACGCCGCACAGTGAGGTTT  
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GGGATTATAGGGATCACATGGCCACGGCCT  
GTAATATTGTCATGTAGCCCGGATGATACC  
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AGAGTTATCAACAGGATCTCGGAATTCCCG  
TAAGCGGGATCTCCTTGCCGATAAGTTTGT  
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CTTCCAAATTCTCCCTACTAACGCATGCTGA  
TGCACCATTTGGAGCATTCTGGGATGGGCGT



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TTTGGAAGCGATACGGGTATAGTCTCACG  
TACTGATGGACTAGTATGCGTGAAGGAATC  
GAATACTTCGACACGATGACGTAGGGAGCC  
ACGCGATCAAGGACTGCCCAGTGGTCTACT  
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TGCCGCTGATTTAATTTTAGCATCGGTGCG  
TGGTAACTTTTAGTATCGCGCCTTTAAAGA  
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TACAGACCAGGTCTTTTGTCCACACCTTGCA  
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GGTCATATACGCAAACACAACAGTAAGTAG  
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GCGCGATAGATGATACTGGCCCGAGACCA  
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TAGTATAAGACTACTGGGCCGCTAGCGGAC  
TATTGACAAATCGCGCGTAGAAAATGCCTG  
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CACGCGCCCTGACGTTCTATTGTAGTGGA  
CTACATTCCCGTCCCACGATAACTGACGTC  
GTA CTGCGTGGAACACTAGTACCGTCCGA

CACCGGCGGATGTCTTAGTTTAGTGGTACT  
TGTCGCCCTTCCAACAAAAGAAGACGTCTC  
AATAGCGTGGTACCGTTTTTCCGTCCTACTC  
TCACGGAGATCACTATGTAGTTTCAGCGTC  
AGGGTGTCTTTAAAACATAGAATCCGTTAG  
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GACGAAATAATAAATAGGGGGGAGCTCGGA  
CCCGTCCGTCATACCAGAGAATCTAAGGGC  
TGGGGGAGGATTAGACCGTCCATCCTGTCA  
AAGGATGCACGTGCAGAGGAAGAGTACAC  
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GGGGTCCTGAAAACCATCCTCTGTCTGAGA  
GTATGTTGAGGAGCGGGATGATGGCGACC  
CTCCCCAACCAGGGGCCCTCTGGTCCGCCTA  
TAGTTTCAGAGATGAATTAGCTAAGGTTGTA  
GCTTATTTTCCATAGGGTTTTTGCTCCGGACC  
ATCCGGTCGTGTAGCGCGATTGACTTGCCG  
GGTTGTGTCCCCGTATCCAGGTCACGACCT  
CATGGGGAAGTAGTGGCTGTCCGGCAGTAT  
CCTGGTACGCACCTCATGTGGTATGCGTGG  
CTGTTGGTCCGTATATGGACCTATATATGGA  
TCGAAGC (SEQ ID NO: 7)

JPEG image of Indian Flag

File Size = 1981 Bytes

DNA bases = 7924

After page 13, last line, delete the present Sequence Listing in entirety and replace with the Sequence Listing attached hereto.